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# The Impact of Society 5.0 on Curriculum Development in Higher Education

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**Keywords**

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**Abstract**

This article explores the concept of Society 5.0, originating from Japan, which envisions a future where the physical and virtual worlds merge to create a more sustainable and inclusive society. Building upon previous societal stages, Society 5.0 leverages advanced technologies like artificial intelligence, the Internet of Things, and robotics to address social challenges while prioritising human welfare. The article delves into the objectives of Society 5.0 and the need for a human-centered approach, accompanied by significant challenges and the imperative for educational reform. Reshaping curriculum development in higher education by emphasising technological literacy, interdisciplinary approaches, ethics and social implications, entrepreneurship, and lifelong learning are changes aiming to prepare students to the rapid technological advancements in the society.

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# 1. Introduction

In the ever-evolving landscape of human civilisation, the concept of Society 5.0 emerges as a beacon of progress, innovation, and inclusivity. Originating in Japan, Society 5.0 represents a visionary approach to societal development, seamlessly integrating the physical and virtual realms to foster sustainability and enhance the quality of life for all individuals. Building upon the evolutionary stages of previous societies, from hunter-gatherer communities to information-centric networks, Society 5.0 envisions a future where advanced technologies serve as catalysts for positive social change.

The journey of human societal evolution, as delineated by Fukuyama (2018), unveils the progression from early communal living to the industrial revolution and the information age. Society 5.0 marks the culmination of this trajectory, heralding a new era characterised by a profound fusion of human-centric values and cutting-edge technologies. It represents a paradigm shift from merely harnessing the power of information to prioritising the welfare and empowerment of individuals, termed as the Super Smart Society.

Central to the ethos of Society 5.0 is the convergence of innovative technologies, including artificial intelligence, the Internet of Things, big data, and robotics. These advancements are envisioned to be seamlessly integrated into the fabric of society, transcending conventional boundaries to propel economic prosperity, environmental sustainability, and societal well-being. Society 5.0 encapsulates a holistic approach that transcends mere technological advancement, placing human needs and aspirations at its core.

Crucially, Society 5.0 advocates for cross-sector collaboration, recognising the imperative of collective action to tackle multifaceted challenges. Governments, industries, academia, and citizens are called upon to synergise their efforts, fostering a collaborative ecosystem conducive to societal advancement. Through this concerted approach, Society 5.0 endeavours to realise a future where innovation and human well-being intertwine seamlessly, transcending geographical and cultural boundaries.

This paper commences by providing a comprehensive definition of Society 5.0, elucidating its core principles and objectives. Subsequently, it examines

the key points associated with Society 5.0, shedding light on its human-centered approach and the integration of advanced technologies. The paper then delves into the challenges posed by Society 5.0, addressing issues such as privacy concerns, job displacement, and ethical considerations. Following this, it explores the role of education in embracing the ideals of Society 5.0, highlighting the need for educational reform to equip individuals with the necessary skills and competencies. Finally, the paper investigates the impact of Society 5.0 on the curriculum of higher education institutions, presenting examples of how educational programs adapt to meet the demands of this transformative era.

## 2. Defining Society 5.0

Society 5.0 is a concept that originated in Japan and refers to a future vision of society that integrates the physical and virtual worlds to create a more sustainable and inclusive society. It builds upon previous societal stages, such as the agricultural, industrial, and information societies, and aims to leverage advanced technologies to address various social challenges. Society 5.0 is the latest stage in the history of the development of human life. According to Fukuyama (2018), Society 1.0 represents a community of hunter-gatherers living in harmony with nature (the Hunting Society). Society 2.0 transitions to agrarian societies characterised by communal agricultural practices, fostering improved organisation and nation-building (known as the Agrarian Society). Society 3.0 emerged as a pro-industrial society shaped by the Industrial Revolution and widespread mass production activities (termed the Industrial Society). Society 4.0 denotes an information-centric society, recognising the value of intangible assets interconnected within an information network (dubbed the Information Society). Fukuyama (2018) further outlines Society 5.0 as an advancement from the information-based Society 4.0, emphasising human-centric social welfare as its overarching goal (referred to as the Super Smart Society).

The concept of Society 5.0 emerged from Japan's "Fifth Science and Technology Basic Plan" announced in 2016 (Towards Realization of the New Economy and Society 2016). It envisions a society where technological

advancements, such as artificial intelligence (AI), the Internet of Things (IoT), big data, robotics, and other emerging technologies, are seamlessly integrated into people's lives to enhance well-being, economic prosperity, and environmental sustainability (Suzuki 2021).

Key elements of Society 5.0 include:

- Human-Centered Approach: Society 5.0 places a strong emphasis on improving the quality of life for individuals. It aims to address societal challenges while ensuring that technology serves the needs and well-being of people.
- Integration of Physical and Virtual Worlds: The concept envisions a highly connected society where the digital world interacts with the physical world seamlessly. This integration allows for enhanced data sharing, analysis, and decision-making to address societal issues effectively.
- Sustainable Development: Society 5.0 aims to create a sustainable society that balances economic growth with environmental preservation. It seeks to leverage technology to develop clean energy solutions, minimize waste, and promote environmentally friendly practices.
- Cross-Sector Collaboration: Society 5.0 recognizes the importance of collaboration between different sectors, including government, industry, academia, and citizens. It encourages partnerships and cooperation to address societal challenges collectively.

By embracing the potential of emerging technologies and integrating them into various aspects of society, Society 5.0 envisions a future where innovation and human well-being go hand in hand. It represents a shift towards a more connected, sustainable, and inclusive society. Japan, as an advanced country known for discovering various advanced technologies, has introduced the concept of Society 5.0, where society has developed to the point of being able to utilize information to enhance its well-being (Suzuki 2021).

# 3. Objectives of the Society 5.0 initiative

The objectives of the Society 5.0 initiative are ambitious, aiming to foster equal opportunities and create an environment conducive to the realization of each individual's potential. Society 5.0 seeks to utilize emerging technologies to eliminate physical, administrative, and social barriers hindering personal fulfillment (Malau 2021). According to the Japanese Business Federation, Society 5.0 envisions a future where every individual, including the elderly and women, can lead a safe, secure, comfortable, and healthy life, and where each person can achieve their desired lifestyle. The technologies associated with Society 5.0 are not only expected to fulfill basic survival needs but also enhance life's meaning and enjoyment. Within Society 5.0, the interaction between humans and technology will be leveraged to create a sustainable, dynamic, and people-centric world (Towards Realization of the New Economy and Society 2016).

### Society 5.0's Dependence on Transformative Future Technologies

The complete set of technologies essential for realizing the Society 5.0 paradigm is still in development, necessitating further progress across various disciplines. Nonetheless, the transformative potential of these technologies, particularly in robotics, artificial intelligence, networked digital platforms, and 3D printing, is not uniformly advantageous. They have the capacity to bring about both societal advancement and disruption, leading to the rapid disappearance of established industries while simultaneously giving rise to unforeseen new sectors (Malau 2021).

# 4. Key points of Society 5.0

Society 5.0 seeks to move forward towards a human-centered society; rather than seeing technology replace humans and jobs, it can be used to augment the capabilities and value of a human workforce. The key points are:

— Society 5.0 aims to increase the quality of human lives, not to increase the power of technology;

- Smart services aim to increase the quality of human lives, not to increase the power of technology;
- A service always involves an interaction among humans, and possibly non-humans;
- We need to understand what human interaction with other humans and non-humans is to understand what smart services are;
- Interaction is (equivalent to) the 'sharing' of information among participants / agents.

## 5. Challenges of Society 5.0

Society 5.0, with its vision of seamlessly integrating advanced technologies into every aspect of human life, offers numerous benefits. However, it also poses several significant challenges and concerns:

- Privacy and Data Security: With the increased use of IoT devices, AI, and big data, there are heightened concerns about the collection, storage, and misuse of personal data. Ensuring robust data privacy and security measures is crucial to prevent data breaches and protect individuals' rights.
- Digital Divide: As Society 5.0 relies heavily on technology, it could exacerbate existing inequalities. Not everyone has equal access to technology or the skills to use it effectively. Bridging the digital divide is essential to ensure that no one is left behind.
- Job Displacement: Automation and AI-driven technologies may lead to job displacement in certain sectors. While Society 5.0 can create new jobs, there's a need for retraining and reskilling the workforce to adapt to these changes.
- Ethical Concerns: The development and use of AI and other technologies raise ethical questions. Issues like bias in algorithms, the ethical use of AI in decision-making, and the potential for technology to be used for malicious purposes must be addressed.
- Environmental Impact: While Society 5.0 aims for sustainability, the rapid adoption of technology can also have a significant environmental footprint. Managing e-waste, reducing energy

consumption, and ensuring responsible production are important considerations.

- Legal and Regulatory Challenges: Current laws and regulations may not keep pace with the rapid advancements in technology. Governments need to adapt and create new legal frameworks to address emerging issues like autonomous vehicles, AI ethics, and data privacy.
- Security Risks: As technology becomes more integrated into daily life, it becomes a target for cyberattacks. Ensuring robust cybersecurity measures is essential to protect critical infrastructure and personal information.
- Cultural and Societal Adaptation: Society 5.0 represents a significant shift in how people live and work. Adapting to this new way of life may be challenging for some individuals and communities, and there may be resistance to change.
- Resource Allocation: Implementing Society 5.0 requires significant investments in technology infrastructure, education, and research and development. Allocating resources effectively to support this transition can be a challenge for governments and organizations.
- Dependency on Technology: As society becomes more reliant on technology, there's a risk of over-dependence. Ensuring that people have the skills and knowledge to function without technology in case of disruptions is important.
- Health and Well-being: While technology can improve healthcare and well-being, there are concerns about the physical and mental health impacts of an increasingly digital and connected society. Striking a balance between technology use and personal well-being is a challenge.
- Cultural Preservation: There is a risk that the rapid adoption of technology could erode cultural traditions and practices. Balancing the preservation of cultural heritage with technological advancement is a concern.

## 6. Education embracing Society 5.0

> "As societies continue to change, education systems need to provide opportunities for learners to develop the knowledge, skills, attitudes, and values that enable them to realise their potential throughout their lives – from early childhood to old age" *(Serpanos 2018)*

In recent years, education has undergone structural transformations driven by the emerging technologies of Society 5.0. Notably, advancements such as video conferencing and virtual reality have facilitated remote learning opportunities for many individuals. While technology continues to reshape industries, societies, and education, its mere integration isn't adequate to foster the anticipated human progress or achieve a much-needed human-centered sustainable society. In education, there's a pressing need to cultivate novel learning methodologies and skills. Meeting new challenges necessitates a shift in approaches, going beyond the mere integration of new information and communication technologies into teaching and learning processes. Sustained utilization of technology in education fosters active student engagement and supports sustainable educational practices. Nevertheless, challenges persist, particularly regarding technical hurdles associated with insufficient infrastructure and the digital skills gap among educators and learners (Vieira, et al. 2023). *"In order for permanent innovation to occur, both individual and organizational learning for change and flexibility are essential, and learning for technology does not suffice".* (Ferreira and Serpa 2018)

Carayannis and Morawska-Jancelewicz (2022) recommend that universities implement adaptive learning programs, collaborative technology for teaching and learning, as well as digital and online resources for teachers and students. These authors emphasize the opinion that universities are responsible for developing curricula that offer their students the opportunity to test their skills and knowledge in practice and acquire new skills through projects aimed at the needs of a specific organization or local communities, such as service-learning.

There are three essential learning skills in Society 5.0: data literacy, human literacy and technological literacy.

> "As sources of knowledge, universities can promote synergies with the business world, sharing knowledge and preparing their students to make ethical and responsible decisions. Qualified professionals are needed in order to enhance concrete actions in line with the United Nations (UN) Sustainable Development Goals (SDGs) of the SD agenda for 2030. *(OECD 2018)*

The OECD Project "*The Future of Education and Skills 2030*" (OECD 2018) sought answers to two broad, far-reaching questions:

What knowledge, skills, attitudes and values do today's learners need to succeed and shape their world?

How can institutional systems effectively develop these knowledge, skills, attitude and values?

To achieve permanent high-quality education for society, enabling human development, sustainable economic growth and social cohesion, it is necessary to focus on some topics considered important by the OECD (OECD 2018): the students must be given the opportunity and ability to learn in formal, nonformal and informal learning environments; they should be supported by qualified and professional teachers; the task of educational institutions is to provide high-quality, honest, cost effective and innovative learning opportunities both in partnership and complementing other organizations and learning environments; and finally, educational systems must produce economic and social results for the benefit of society while also adapting to the new challenges. Education, teachers/educators and educational institutions and foundations have a great responsibility for raising the quality of human capital and the engine of society in the process of changes and transformations. So, all parties have a long way to go: students, teachers/educators, educational institutions and external parties (OECD 2018).

The Society 5.0 era, whether directly or indirectly, will have an impact on all aspects of life. In the field of education, it must be strengthened by changes in the competencies taught to students and the implementation of innovative learning models. Competencies for the 21st century include creativity, critical thinking, flexibility, openness, innovation, agility, competitiveness, problem sensitivity, information mastery, the ability to work in cross-disciplinary teamwork, and adaptability are crucial competencies to be taught to students to face the challenges and demands of life in the upcoming era of Society 5.0. Learning models that emphasize deductive processes and the transfer of knowledge from teachers to students are no longer sufficient to keep pace with the accelerating changes (Adbillah, et al. 2022).

Education, with all its aspects, is carried out to prepare future human resources capable of adapting to their time. Various social studies emphasize that in Society 5.0, the use of technology, data, and automation is inevitable. The world is becoming increasingly interconnected due to technological advancements. There is a significant shift from an economy based on natural or human resources towards a knowledge-based economy, with implications for the quality of human resources, education, and job opportunities.

Furthermore, in the context of the 21st century within Society 5.0, the essential human resource skills include (Nuryadi and Widiatmaka 2023):

- Ways of thinking, encompassing creativity and innovation, critical thinking, problem-solving, decision-making, learning to learn, and metacognition.
- Ways of working, including communication and collaboration.
- Tools for working, including information literacy and ICT literacy.
- Living in the world, covering citizenship, life and career, personal and social responsibility, including cultural awareness and competence.

# 7. Impact of Society 5.0 on curriculum development

Society 5.0 has a significant impact on curriculum development in higher education. As technology advances and transforms various industries and sectors, higher education institutions need to adapt their curricula to ensure that students are equipped with the skills and knowledge necessary to thrive in this new society. Here are some key impacts of Society 5.0 on curriculum development:

## Technological literacy

Society 5.0 places a strong emphasis on technological literacy and digital skills. Higher education institutions are incorporating courses and programs that focus on areas such as artificial intelligence, big data analytics, cybersecurity, internet of things, and robotics. Students need to understand these technologies and how they can be leveraged to address societal challenges.

## Interdisciplinary approach

Society 5.0 requires a multidisciplinary and interdisciplinary approach to problem-solving. Curriculum development in higher education is shifting towards integrating various disciplines to foster collaboration and innovation. Students are encouraged to work across traditional boundaries and develop skills in critical thinking, creativity, communication, and teamwork.

## Ethical and social implications

With the integration of advanced technologies in Society 5.0, higher education institutions are incorporating courses that explore the ethical and social implications of these technologies. Students are encouraged to critically analyze the impact of AI, automation, and data-driven decision-making on privacy, equity, and social justice. Courses in ethics, responsible innovation, and digital citizenship are becoming more prominent (Wulandari, Winarno and Triyanto 2021).

### Entrepreneurship and innovation

Society 5.0 promotes entrepreneurship and innovation as drivers of economic growth and social progress. Higher education institutions are developing programs and courses that foster an entrepreneurial mindset, teach innovation methodologies, and provide opportunities for students to develop their own startups or projects. The focus is on encouraging students to be proactive, adaptable, and capable of creating positive change.

### Lifelong learning and adaptability

Society 5.0 is characterized by rapid technological advancements, requiring individuals to embrace lifelong learning and adaptability. Higher education institutions are reevaluating their approaches to curriculum development by incorporating flexible and modular learning pathways. They are encouraging students to develop skills such as critical thinking, problem-solving, and learning agility, which will enable them to adapt to evolving technologies and societal needs throughout their careers.

To build Society 5.0, the future requires an appropriate learning model to overcome the discrepancy problem of the 5.0 community learning paradigm and schools must transform teacher-centered learning into student-centered learning so that students can think critically, deductively, and inductively in this era of disruption.

## 8. Examples of the impact of Society 5.0 on curricula

In this section the impact of Society 5.0 on the curricula of Accounting, Management Sciences, Teacher Training and Media and Design will be discussed.

### Accounting:

The evolving global economic landscape necessitates attention from accountants, elevating their profession to a pivotal and strategic role across

various sectors. To adapt to these changes, accounting education and curriculum must undergo continuous refinement, incorporating information technology into accounting courses to align with the demands of the Fourth Industrial Revolution and the subsequent emergence of Society 5.0. As human resources diminish in relevance during the Fourth Industrial Revolution, the role of accountants undergoes transformation, encompassing tasks such as: (1) statistically analyzing processed data; (2) generating non-financial reports; (3) transitioning from a traditional bookkeeping role to that of an analyzer; and (4) ensuring data quality checks (Malau 2021).

Society 5.0, characterized by advanced technologies and the integration of digital innovations, would bring significant changes to the curriculum of Accounting programs. These changes would reflect the evolving role of accountants and financial professionals in managing data, analyzing financial information, and making strategic decisions in a highly digitized and interconnected society. Here are ways in which the curriculum might be influenced:

- Data analytics and big data: The curriculum would include a strong emphasis on data analytics and the use of big data in accounting. Students would learn how to collect, analyze, and interpret large datasets to derive valuable insights for decision-making.
- Advanced technology proficiency: Accounting professionals would need to be proficient in using advanced accounting software, automation tools, and artificial intelligence for tasks like data entry, reconciliation, and financial modeling.
- Cybersecurity and data privacy: Given the increased reliance on digital systems, accounting programs would include coursework on cybersecurity and data privacy to ensure that financial information remains secure and compliant with data protection regulations.
- Blockchain and cryptocurrency: As blockchain technology and cryptocurrencies gain prominence, students would be taught about their impact on financial transactions, auditing, and regulatory compliance.

- Ethical considerations in data usage: With the growing importance of data ethics, the curriculum would include discussions on the responsible and ethical use of data in financial reporting and analysis.
- Global accounting standards: Accounting programs would emphasize the understanding of international accounting standards and regulations, given the global nature of business transactions in Society 5.0.
- Sustainability accounting: Students would learn about sustainability reporting and environmental accounting practices to address the increasing emphasis on corporate social responsibility and sustainability in Society 5.0.
- Interdisciplinary skills: The curriculum might incorporate elements from other disciplines, such as business analytics, finance, and technology, to prepare accountants for cross-functional roles that require collaboration with professionals from different fields.
- Continuous learning and adaptation: Accounting professionals would be encouraged to engage in continuous learning to stay updated with emerging technologies and changes in accounting regulations.
- Communication and presentation skills: With the need to convey complex financial information to various stakeholders, the curriculum would place a strong emphasis on communication and presentation skills.
- Risk management and resilience: Given the interconnected and rapidly changing nature of Society 5.0, accounting programs might include coursework on risk assessment, management, and resilience planning.
- Audit Automation: Students would be trained in using automated auditing tools and techniques to improve the efficiency and accuracy of financial audits.
- Business ethics: The curriculum would include courses on business ethics to ensure that accountants understand their ethical responsibilities and can navigate ethical dilemmas in their roles.

- Adaptive leadership: Accounting professionals would be prepared for leadership roles that require adaptability and the ability to lead organizations through digital transformations.
- Regulatory compliance: Accounting programs would ensure that students are well-versed in evolving financial regulations, compliance requirements, and reporting standards.
- Environmental, Social, and Governance (ESG) Reporting: As ESG factors gain importance in investment decisions, accounting programs might include courses on ESG reporting and its impact on financial analysis.

In summary, the curriculum of accounting programs in Society 5.0 would evolve to equip students with the skills and knowledge needed to excel in a highly digitized, data-driven, and interconnected financial environment. It would emphasize data analytics, technology proficiency, ethical considerations, sustainability reporting, and adaptability to address the evolving needs of accounting professionals in this advanced society.

Fintech represents a technological advancement within the financial realm, encompassing innovations spanning investment, financial education, retail banking, and even cryptocurrencies like Bitcoin. The adoption of financial technology (fintech) has the potential to extend the accessibility of financial services and establish avenues for entities to access a comprehensive array of financial tools and services at cost-effective rates (Malau 2021).

### Management sciences

Society 5.0 represents a vision of a highly advanced and technologically integrated society that leverages emerging technologies like artificial intelligence, the Internet of Things, big data, and more to solve complex societal challenges and improve the overall quality of life. In such a society, the curriculum of Management sciences would likely undergo significant changes to prepare students for the challenges and opportunities of this new era. Here are some ways in which the curriculum might be affected:

- Emphasis on technology and data skills: Management professionals in Society 5.0 would need a strong foundation in technology and

data management. Courses related to data analytics, artificial intelligence, machine learning, and cybersecurity would become integral to the curriculum.

— Ethical considerations: As technology becomes more pervasive in decision-making, there would be a greater emphasis on ethics and responsible management. Students would be taught how to navigate the ethical implications of data usage, AI decision-making, and the potential consequences of technological advancements.
— Interdisciplinary education: Society 5.0 encourages collaboration across various disciplines. Management programs might integrate coursework from fields such as engineering, computer science, environmental sciences, and healthcare to foster interdisciplinary problem-solving.
— Digital transformation strategies: The curriculum would include courses on digital transformation strategies for businesses and organizations. Students would learn how to leverage technology to optimize processes, enhance customer experiences, and drive innovation.
— Sustainability and environmental management: Given the emphasis on sustainability and addressing environmental challenges in Society 5.0, management programs would likely include courses on sustainable business practices, environmental management, and green technologies.
— Crisis management and resilience: With the increased interconnectedness and potential for disruption in a highly technological society, management programs would place a greater emphasis on crisis management, resilience planning, and risk mitigation.
— Cultural competence: As Society 5.0 envisions a global society with diverse populations, management professionals would need to be culturally competent and capable of working in international settings. Cross-cultural management and communication skills would be important components of the curriculum.

- Lifelong learning: Given the rapid pace of technological change in Society 5.0, the curriculum might promote a culture of lifelong learning. Students would be encouraged to stay updated on emerging technologies and management practices throughout their careers.
- Entrepreneurship and innovation: Society 5.0 encourages innovation as a means to solve societal problems. Management programs would likely include courses on entrepreneurship, innovation management, and strategies for fostering a culture of innovation within organizations.
- Human-machine collaboration: Management professionals would need to understand how to facilitate effective collaboration between humans and machines. This might involve courses on human-computer interaction, augmented reality, and human-robot collaboration.
- Global perspective: In a highly connected world, management education would include a global perspective, emphasizing international business, global supply chains, and the interconnectedness of economies and markets.
- Soft skills: While technical skills are crucial, soft skills like critical thinking, adaptability, communication, and leadership would remain essential in a society where human-machine collaboration and ethical decision-making are paramount.

In essence, the curriculum of Management sciences in Society 5.0 would evolve to equip students with the skills, knowledge, and mindset needed to thrive in a technologically advanced and socially responsible society that leverages innovation and technology to address complex challenges. It would also emphasize adaptability and a commitment to ethical and sustainable practices in the ever-changing landscape of business and management.

## Teacher training

Society 5.0 envisions a highly advanced and technologically integrated society that uses emerging technologies to address complex societal challenges and improve the quality of life. The changes in teacher training

curriculum in such a society would reflect the need for educators to prepare students for this rapidly evolving world (Wulandari, Winarno and Triyanto 2021). Here are some ways in which the curriculum of teacher training might be affected:

- Digital literacy and technology integration: Teachers would need to be well-versed in digital literacy and technology integration. The curriculum would include training in the use of educational technology, online learning platforms, and digital tools for teaching and assessment.
- Pedagogy for online and blended learning: As online and blended learning become more prevalent, teacher training programs would include pedagogical approaches for effective online instruction, including strategies for engaging students in virtual environments.
- Data literacy and analytics: Teachers would be trained in data literacy to make data-driven decisions about student performance and adapt their teaching methods accordingly. This might include courses on educational data analysis and interpretation.
- Personalized learning: Society 5.0 promotes personalized approaches to education. Teachers would receive training in how to tailor instruction to meet the unique needs and abilities of each student, potentially incorporating adaptive learning technologies.
- Critical thinking and problem-solving: The curriculum would emphasize the development of critical thinking and problem-solving skills in students. Teachers would be trained in methods for fostering these skills in the classroom.
- Emphasis on Ethics and Digital Citizenship: Given the increased use of technology, teachers would play a crucial role in educating students about digital ethics and responsible digital citizenship. The curriculum would include modules on these topics.
- Cultural competence: In a globalized society, teachers would need cultural competence training to understand and respect diverse perspectives and backgrounds in their classrooms.

- Sustainability education: As sustainability becomes a central theme in Society 5.0, teachers would be trained to incorporate environmental and sustainability education into their lessons.
- Social and emotional learning (SEL): Teacher training programs might include SEL components to help educators support students' emotional well-being and social development, which are crucial in an increasingly interconnected world.
- Interdisciplinary approaches: Teachers might receive training in interdisciplinary approaches to education, encouraging them to collaborate across subjects and integrate various disciplines into their teaching.
- Lifelong learning skills: In a rapidly changing society, teachers would be encouraged to model lifelong learning and be trained to help students develop the skills and motivation for continuous learning throughout their lives.
- Innovation and creativity: Teacher training would emphasize fostering innovation and creativity in students, preparing them to be adaptable problem solvers and innovators in a dynamic society.
- Community and global Engagement: Teachers might be trained to facilitate community and global engagement projects, encouraging students to connect their learning to real-world issues and contribute to their communities.
- Assessment strategies: The curriculum would include training in modern assessment strategies, including formative and summative assessment methods that align with digital and personalized learning.
- Inclusive education: Teacher training would prioritize inclusive education practices, ensuring that educators are equipped to support students with diverse abilities and learning styles.
- Mental health and well-being: Given the increasing importance of mental health, teacher training programs might include modules on recognizing and addressing mental health challenges in students.

In summary, teacher training in Society 5.0 would evolve to equip educators with the skills and knowledge needed to prepare students for a rapidly

changing, technologically advanced, and interconnected world. It would emphasize digital literacy, personalized learning, ethical considerations, and the development of 21st-century skills while fostering a commitment to lifelong learning and responsible citizenship.

### Media and design:

Society 5.0, with its emphasis on advanced technologies and their integration into daily life, would significantly impact the curriculum of Media and design programs. These changes would reflect the evolving role of media and design in shaping communication, entertainment, information dissemination, and the overall human experience. Here's how the curriculum might be influenced:

- Digital media proficiency: The curriculum would place a strong emphasis on digital media skills, including graphic design, video production, animation, and interactive media development. Students would need to master various software tools and technologies used in media production.
- User experience (UX) and User interface (UI) design: As digital interfaces become increasingly important in Society 5.0, students would receive training in designing intuitive and user-friendly digital interfaces for websites, apps, and other digital platforms.
- Virtual and augmented reality (VR/AR): Media and design programs would likely introduce courses on creating content for VR and AR experiences. Students would learn how to design immersive environments and interactive storytelling in these emerging media forms.
- Data visualization: With the growing importance of data in decision-making, the curriculum might include courses on data visualization techniques, enabling students to convey complex information effectively.
- Ethical and responsible design: In Society 5.0, media and design professionals would need to consider the ethical implications of their work. The curriculum would include discussions on ethical design, privacy considerations, and responsible content creation.

- AI and automation integration: Media and design programs might incorporate coursework on how artificial intelligence and automation can be leveraged to enhance creative processes, such as AI-generated art or automated content curation.
- Content creation for emerging platforms: With the rise of new media platforms, students would be trained to create content optimized for platforms like TikTok, Instagram, and other emerging social and entertainment platforms.
- Transmedia storytelling: The curriculum could include courses on transmedia storytelling, teaching students how to craft narratives that span multiple media platforms and engage audiences across various channels.
- Cultural sensitivity and global perspective: In a globally connected society, media and design professionals would need to be culturally sensitive and capable of creating content that resonates with diverse audiences. Cross-cultural communication and global perspectives would be integrated into the curriculum.
- Sustainability and green design: Media and design programs might include modules on sustainable design practices and the use of eco-friendly materials and technologies in media production.
- Critical media literacy: Given the abundance of information in Society 5.0, students would be taught critical media literacy skills to discern reliable sources from misinformation and understand the impact of media on society.
- Interdisciplinary collaboration: Media and design students might collaborate with students from other fields, such as technology, business, and healthcare, to solve complex problems and create innovative projects.
- Entrepreneurship and business skills: As media and design professionals increasingly work in entrepreneurial roles, the curriculum might incorporate business and entrepreneurship courses to prepare students for freelance work or starting their own media-related ventures.

- Continuous learning and adaptation: The curriculum would encourage students to stay current with rapidly evolving technologies and trends in media and design through continuous learning and adaptation.
- Legal and copyright knowledge: Students would need to understand intellectual property rights, copyright laws, and legal issues related to media production and distribution.
- Mental health and well-being considerations: Media and design programs might include discussions on the potential impact of media content on mental health and well-being, encouraging responsible content creation.

In summary, the curriculum of Media and design programs in Society 5.0 would evolve to equip students with the skills, knowledge, and ethical awareness needed to excel in a technologically advanced, interconnected, and information-rich society. It would emphasize digital proficiency, creativity, responsible design, and adaptability to meet the demands of the ever-evolving media landscape.

## 9. Conclusion

The advent of the Fourth industrial revolution and Society 5.0 has fundamentally altered humanity's role, moving beyond mere objects exploited by globalization. Both epochs bring about significant changes, encompassing both positive and negative consequences. In the Fourth industrial revolution, the negative aspect involves the displacement of human and animal labor by sophisticated machinery and robots, leading to a diminished sense of humanity. Conversely, this era also enables remote work opportunities, allowing individuals to earn income from anywhere using computers.

Society 5.0 holds promise in empowering numerous students, particularly those engaged in skill-based training programs requiring repetitive practice. Technological integration can facilitate training and aid students, necessitating educators to stay updated on emerging technologies and their application within various programs.

Education within Society 5.0 harnesses a plethora of tools, including massive open online course platforms, advanced learning management systems, mobile learning, flipped classrooms, gamification, wearable technologies, robotics, learning analytics, and artificial intelligence. These tools foster personalized learning experiences, catering to individual progress and enhancing academic achievements through data analysis. Educators assume guiding roles in personalized learning, enabling students to pursue their educational objectives at their own pace (Darmaji, Mustiningsih and Arifin 2019).

In conclusion, the evolution from Society 4.0 to Society 5.0 reflects the profound impact of technological advancements on education at all levels. Society 5.0 represents the convergence of technology and learning, promising a future where education is personalized, flexible, and aligned with the demands of the fourth industrial revolution.

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## 11. Short biography

Carina de Villiers is emeritus professor of the University of Pretoria. She obtained a BSc (Computer Science and Mathematics), Higher Education Diploma, Diploma in Tertiary Education, MEd (Didactics) *cum laude*, Honours degree in Computer Science and PhD (Informatics) degree.

She is a member of several international bodies and serves on a number of editorial and advisory boards for journals. She holds a National Research Foundation rating as an established researcher since 2000. She joined STADIO in June 2022 as Head of the School of Information Technology.

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